PWR-ICE 250

USER MANUAL

Revision	Description	Date
V1.0	Initial revision	26-02-2014

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1 Product Introduction

PWR-ICE 250 is a Digital Audio Signal Processor (DSP) capable of performing a wide range of applications, from filtering, equalization to time alignment. Using a computer and an ETHERNET connection, you will be able to control your platform from the "plug-in": an intuitive software application allowing real time modification to your configuration.

Besides its audio specs, a great part of our product concept lies in its simplicity of use. The sequence of steps required to control a miniDSP can be summarized as follow:

- Connect the board to your PC using an ETHERNET cable
- Launch the plug-in to configure settings as required
- The device is automatically discovered and advertised in the "device tree" by its custom name
- Connect to one of the discovered PWR-ICE250 and perform live configuration of your unit. All settings are automatically saved to both the DSP and the Flash for long term memory.
- Once happy with your configuration, you can disconnect the board from your computer since from this point on, the audio configuration will run as last modified in on-line mode and recalled following every reboot.
- Enjoy!

Minimum System Requirements for software installation

MiniDSP software requires in a PC environment with the following minimum requirements:

PC Environment

- PC with 1GHz or higher processor clock speed recommended / Intel® Pentium®/Celeron® family, or AMD K6®/AMD Athlon®/AMD Duron® family, or compatible processor recommended.
- 512 megabytes (MB) of RAM or higher recommended
- ETHERNET 100Mbps port or higher
- Keyboard and mouse or compatible pointing device
- Microsoft• ® Windows® Vista® SP1/ XP pro SP2/Win7
- Microsoft• ® .NET framework v3.5
- Adobe AIR environment (latest version)
- Adobe Flash player (latest version)

Package content

Your miniDSP package includes:

- 1 x PWR-ICE 250
- 1 x RJ45 cable, 2m long
- 1 x IEC power cable
- 4 x black wood screws for mounting
- 1 x set of speaker cables from amplifier to speakers (60cm)

DISCLAIMER / WARNING

An incorrect miniDSP configuration could easily damage your audio system. MiniDSP can not be responsible for any damage that may result from the improper use of this product. As with any other product, we do recommend that you carefully read the manual and other technical notes to insure you fully understand how to operate the board.

As a general guideline, you should first configure your miniDSP board **before** connecting anything to the outputs of the MiniDSP (loudspeakers/other output sources). Doing so will insure that you have the software correctly configured and won't cause any damage to your system. Once again, miniDSP can not be responsible of any damages the board make cause to your system.

Finally, MiniDSP is a very flexible board and 99% of typical questions we receive at the tech support department are already answered in this user manual. So please take the time to carefully read this user manual. Thanks for your understanding!

WARRANTY TERMS

miniDSP Ltd warrants all our products to be free of from defects in materials and workmanship for a period of one year from the invoice date. Our warranty terms do not cover failure of the product due to an external trigger, misuse, servicing or usage outside of the recommended use. With this said, make sure to carefully read the user manual when customizing the board. Any board damage investigated as failure to follow proper installation may void the warranty. So if in doubt, **please make sure to contact us first**.

Safety Instructions

• Read the information for use
• Please keep this user manual in a safe place during the lifetime of the product. The user manual forms an integral part of the product. Reselling of the product is only possible if the user manual is available. Any changes made to the product have to be documented in writing and passed on to the buyer in the event of resale.
• Heed all warnings.
• Follow all instructions.
• Do not use this product near water (for example, in damp rooms or near a swimming pool).
• Clean only with dry cloth.
• Do not cover the heat sink. Install in accordance with the user manual.
• Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
• Protect the power cord from being walked on, pinched or damaged in any other way. Pay particular attention to plugs and the point where they exit from the Amplifier Unit.
• The product may only be used in accordance with the information provided in the user manual. Before and during the usage of the amplifier please ensure that all recommendations, especially the safety recommendations as detailed in the user manual, are adhered to. The Amplifier Unit is designed for the amplification of pulsed audio signals and the Amplifier Unit should only be connected to speakers with average impedance that is not lower than the impedances specified in the User's Manual.
• Do not place the product on an unstable cart, stand, tripod, bracket, or table. The device may fall, causing serious injury, and serious damage to the device itself.
• The Amplifier Unit can only be disconnected from the power supply by removing the plug, which must be freely accessible at all times. Unplug this Amplifier Unit during lightning storms or when unused for long periods of time.
• Refer all servicing to qualified service personnel.

Damages that require service
Unplug the Amplifier Unit from the mains supply and refer to your dealer/distributor or other authorized repair workshop. Servicing is required when

1. The power-supply cord or plug has been damaged,
2. Liquid has been spilled or objects have fallen into the amplifier,
3. The amplifier has been exposed to rain or moisture,
4. The amplifier has been dropped or suffered damage in any other way,
5. The amplifier exhibits a distinct change from its normal function or performance.

Servicing
Do not attempt to service this product yourself. As opening or removing covers may expose you to dangerous voltage or other hazards, the amplifier may only be opened by qualified personnel. Please refer to your dealer/distributor.

Servicing and Replacement Parts
All service and repair work must be carried out by an authorized dealer/distributor. When replacement parts are required, please ensure that the dealer/distributor only uses replacement parts specified by the manufacturer. The use of unauthorized replacement parts may result in injury and/or damage through fire or electric shock or other electricity-related hazards.

Safety Check
Upon completion of any service or repairs to this product, ask the dealer/distributor to perform safety checks to determine that the amplifier is in proper operating condition.

Read the information for use (user manual)
When shipping the product, always use the original shipping carton and packing materials. For maximum protection, repack the unit as it was originally packed at the factory.

Environments
Use this product only in E1, E2, E3 or E4 environments according to EN55103-2 "Electromagnetic compatibility – Product family standard for audio, video and audio-visual and entertainment lighting control apparatus for professional use – Part 2: Immunity"

Ventilation and heat sink
The heat sink is provided to ensure reliable operation of the Amplifier Unit and to protect it from overheating. The heat sink must not be blocked or covered. This product should not be installed unless proper ventilation is provided or manufacturer's instructions have been adhered to.

Water And Moisture
Do not use this product near water (for example, in damp rooms or near a swimming pool).

Cleaning
Unplug the Amplifier Unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners.

Power-cord Protection
Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon them or against them, paying particular attention to cords and plugs, and the point where they exit from the Amplifier Unit.

Lightning
For added protection of the product during lightning storms, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges. Disconnection from the mains power supply can only be achieved by removing the plug from the mains socket and by external disconnection of all poles from the mains.

Interference of external objects and/or liquids with the appliance
Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the amplifier.

Accessories
Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury, and serious damage to the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Connecting
When you connect the Amplifier Unit to other equipment, turn off the power and unplug all of the equipment from the supply source. Failure to do so may cause an electric shock and serious personal injury. Read the user's manual of the other equipment carefully and follow the instructions when making the connections.

Sound Volume
Reduce the volume to minimum before you turn on the amplifier to prevent sudden high levels of noise which may cause hearing or speaker damage.

Output connectors
WARNING: Output connector marked with the lightning flashes indicate high voltages that are potentially life threatening. Wiring to these terminals requires installation by an instructed person and the use of ready-made leads or cords. Custom wiring should only be carried out by qualified personnel.

To prevent electric shock, do not operate the product with any of the conductor portion of the speaker wire exposed.

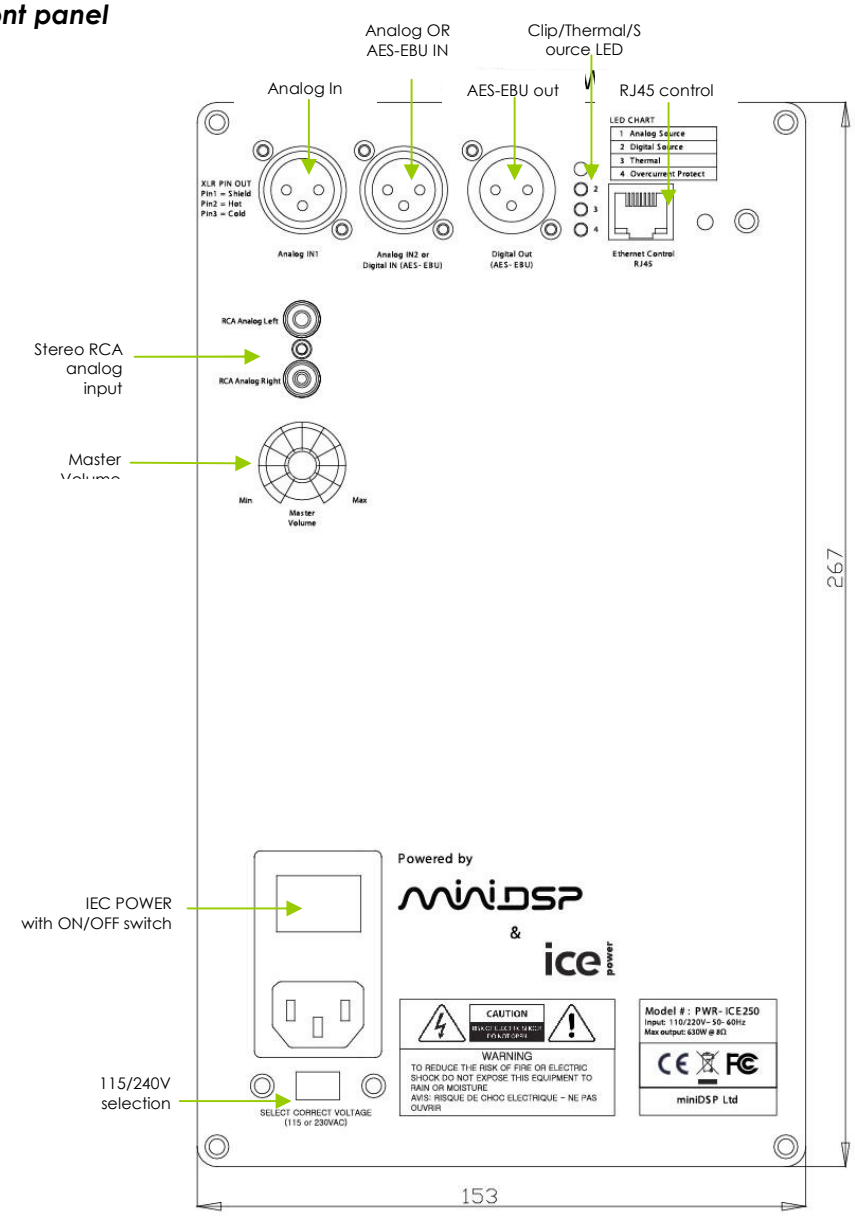
NOTE: For reasons of safety and performance, use only high-quality fully insulated speaker cables of stranded copper wire. Use the largest wire size that is economically and physically practical, and make sure the cables are no longer than necessary.

Precautions when connecting to MAINS IN
When mounting or connecting the product always disconnect it from mains. Only connect the product to an appropriate AC circuit and outlet, according to the requirements indicated on the rating plate.
If a power cut occurs while the amplifier is switched on, it will restart automatically once the power supply has been restored. All settings prior to the loss of power will be maintained.
IMPORTANT: Always connect the Product to mains through the MAINS IN connector on the Amplifier Unit.

DO NOT REMOVE MAINS CONNECTOR GROUND, IT IS ILLEGAL AND DANGEROUS.

2 System Connectivity

2.1 PWR-ICE front panel



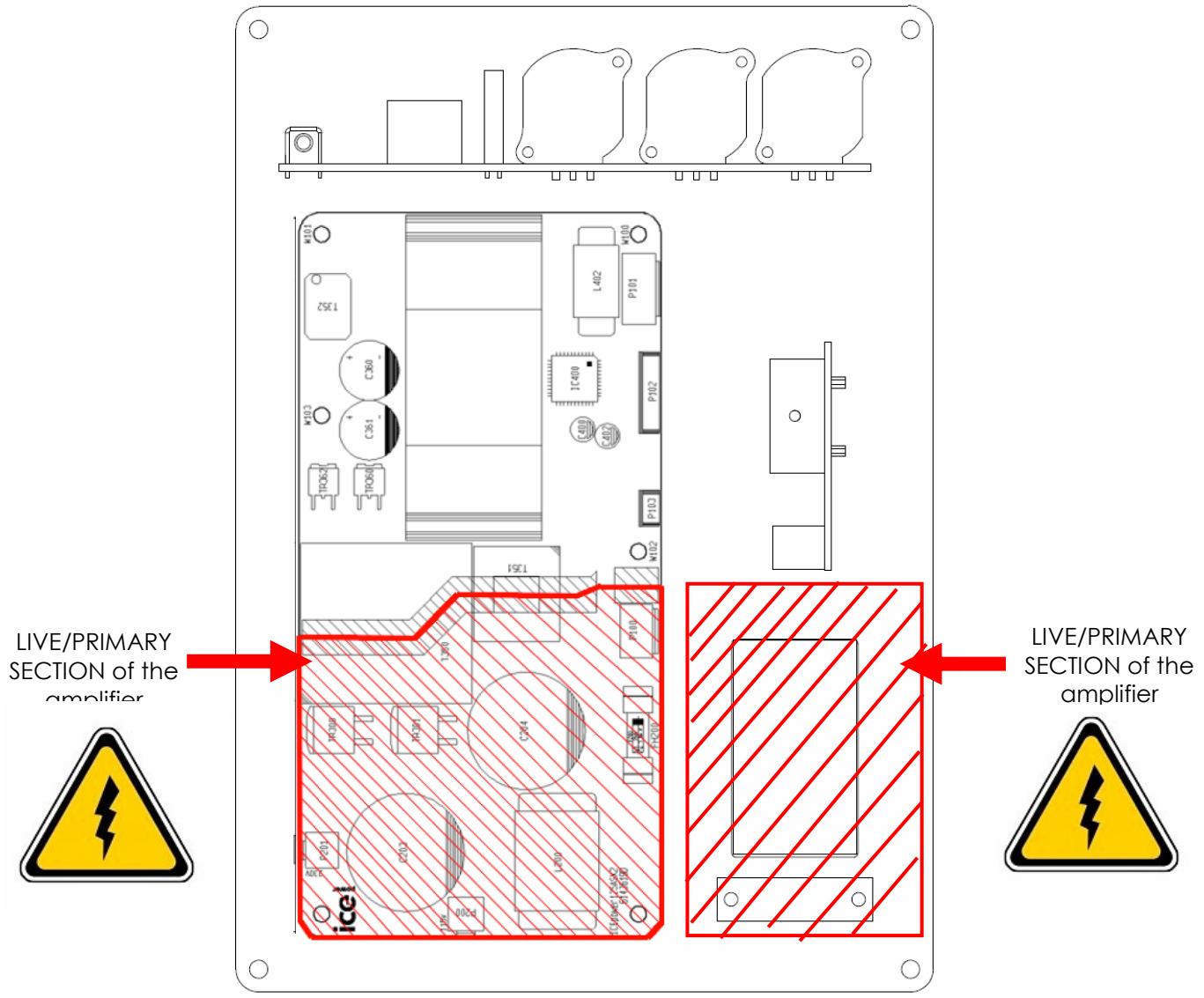
2.2 PWR-ICE Rear panel

To prevent electric shock, do not operate the product with any of the conductor portion of the speaker wire exposed. The PWR-ICE250 operates at hazardous voltage. For this reason, you should never operate the plate amplifier and touch the rear of the unit.

ALWAYS DISCONNEC THE AC POWER FROM THE UNIT BEFORE DOING ANY MODIFICATION TO YOUR PLATE AMPLIFIER.

See below rear of the unit. All red sections are Live section (primary). You should never operate this plate amplifier without proper installation (i.e. mounted to your speaker).

Always plan for a clearance of 12mm with any elements of the rear of the module for a safe distance.



2.3 AC power 115/230v switch

The PWR-ICE 250 requires to be configured for the AC voltage. Make sure to correctly configure with the correct voltage of your country. Our team will "pre-configure" the module based on your choice in the shopping cart.

115V setting

230V setting

Amplifier output wiring

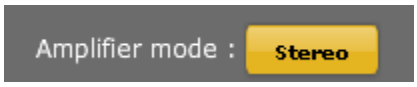
The PWR-DSP250 amplifier can operate in Single Ended (SE) or Bridge Tied Load (BTL) mode. The following wiring configuration shows the typical wiring. Note that amplifier output wiring is already labeled at the factory with the channel # (OUT 1, OUT2). Pay close attention to the wiring diagrams below to insure you correctly configure your drivers.

Few tips & tricks when setting a 2 way speaker to insure your configuration is safe:

a) Always start with low levels (e.g. min volume @ back of speaker)
b) Always un-mute in the DSP the "High Frequency output" (channel 2 in a default DSP configuration) as a FIRST STEP! If incorrect wiring, you'll send high frequency to the LF driver. You won't damage anything. The other way around isn't true.
c) Slowly increase the level and confirm your signal is coming out from the correct driver.
d) Do the same for the other driver.

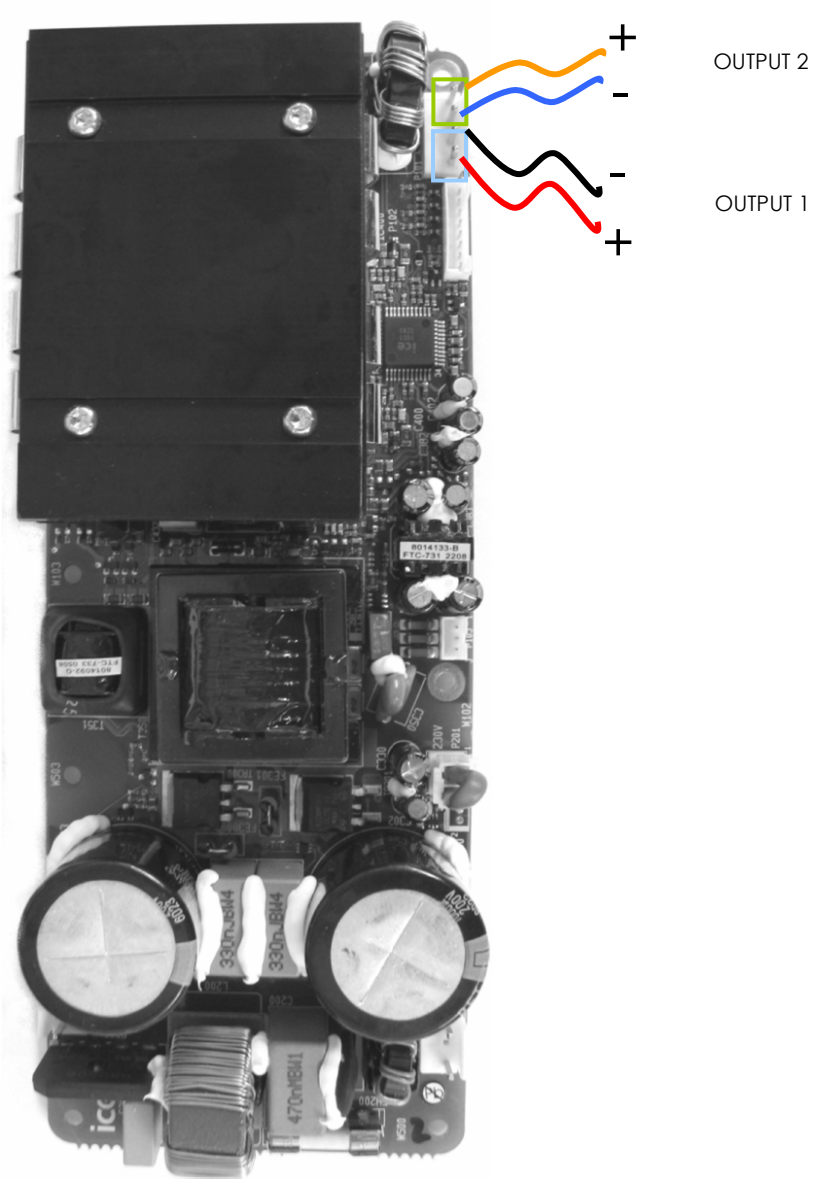
2.3.1 SE configuration for stereo mode / 2x 250W Max @ 4Ohms

The PWR-ICE250 operates by default in this mode. The configuration is done from the plug-in software to "Stereo mode".



See wiring from the amplifier module and to the speakers. Pay close attention to the polarity (+/-) and OUTPUT numbering.

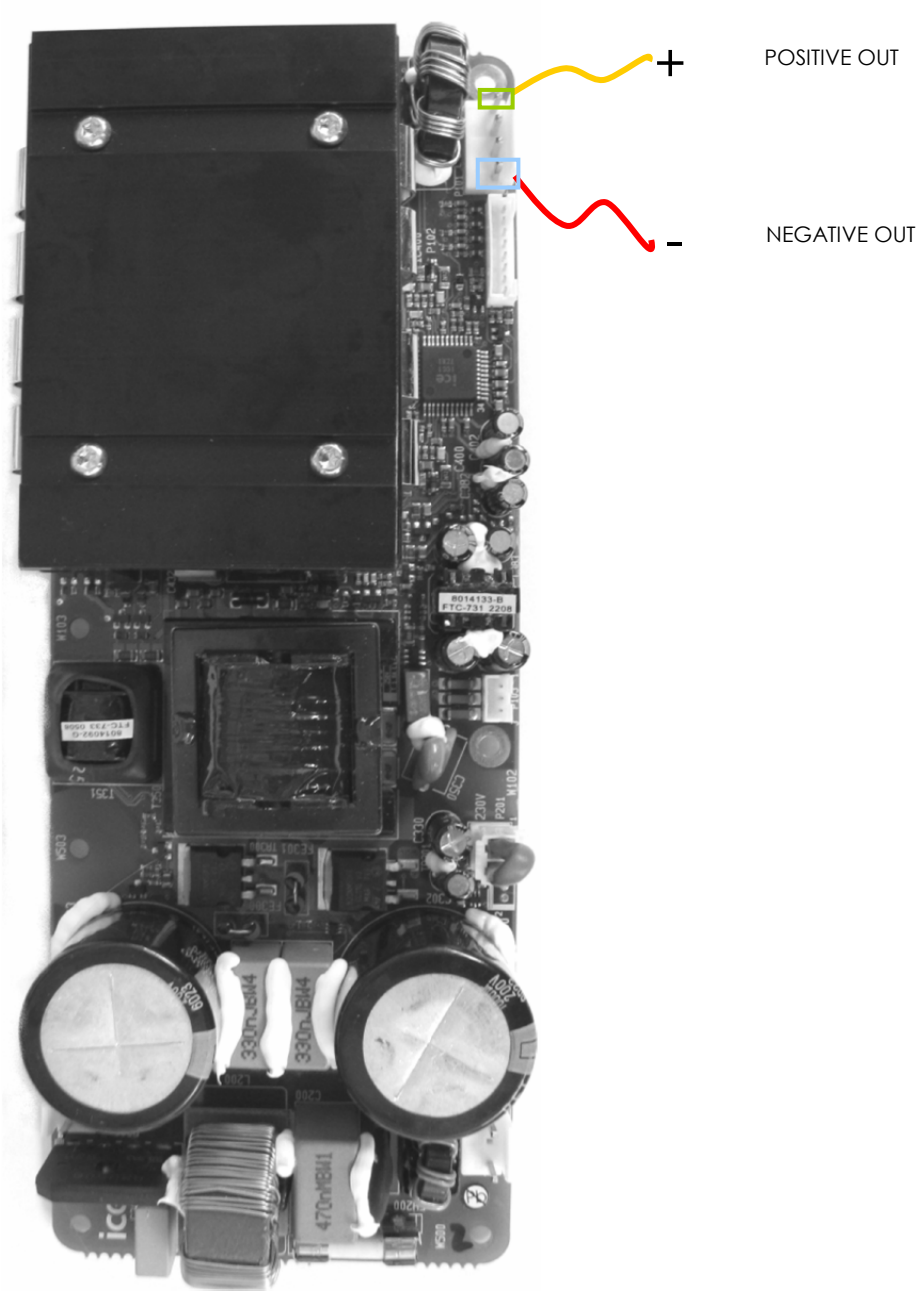
2.3.2



BTL configuration for bridged mode (Mono mode) / 1 x 450W Max @ 4 Ohms

The PWR-ICE250 can operate in "bridged" mode where both channels are combined to a mono output. To enable the bridged mode, you first need to configure the amplifier from the software to "Mono/Bridged" mode.

See below picture for the wiring in a Bridged mode. Note that both RED wires(positive) are used in this configuration.



2.3.3 Enclosure fitting

The PWR-ICE250 is not completely sealed for the XLR connectors + Reset. Some of these connectors not having a way to be 100% sealed. For that reason, it may require a separate "sealed" enclosure for high power/low frequency applications such as a sub.

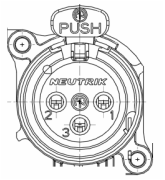
Please consult the mechanical drawings at the end of this user manual for more info about dimension and recommended cut out.

2.3.4 Audio connectivity

The PWR-ICE 250 can accept multiple types of audio format (Analog or Digital). The input source is selectable to one of the source (via software)

Analog Balanced Audio input connectivity pin out

Balanced connection
1 = > Cable Shield 2 = > Positive cable 3 = > Return cable

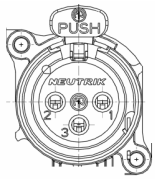


Analog unbalanced (RCA) connectivity pin out

Unbalanced connection
1 = > Cable Shield 2 = > Positive cable

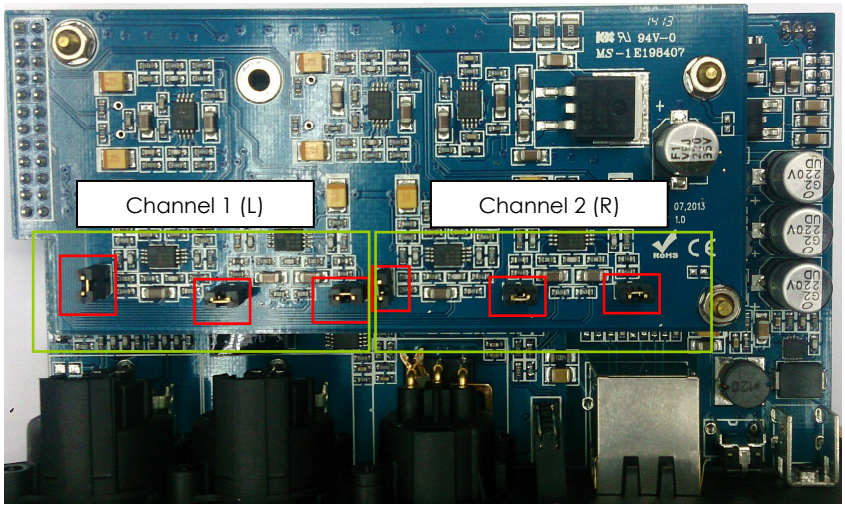
Digital Balanced Audio (AES) input/output connectivity pin out

Digital Balanced connection (AES)	Digital unbalanced connection (SPDIF)
1 = > Cable Shield 2 = > Positive cable 3 = > Return cable	1 = > Cable Shield 2 = > Positive cable 3 = > Not required



2.3.5 Analog Audio input sensitivity jumpers

The input sensitivity (Maximum level before saturation) of the module can easily be modified with jumpers to better fit your equipment. Note that all changes must be performed with the amplifier OFF and jumpers of a channel must all be in the same state (e.g. all 3 jumpers of channel 1 OPEN).

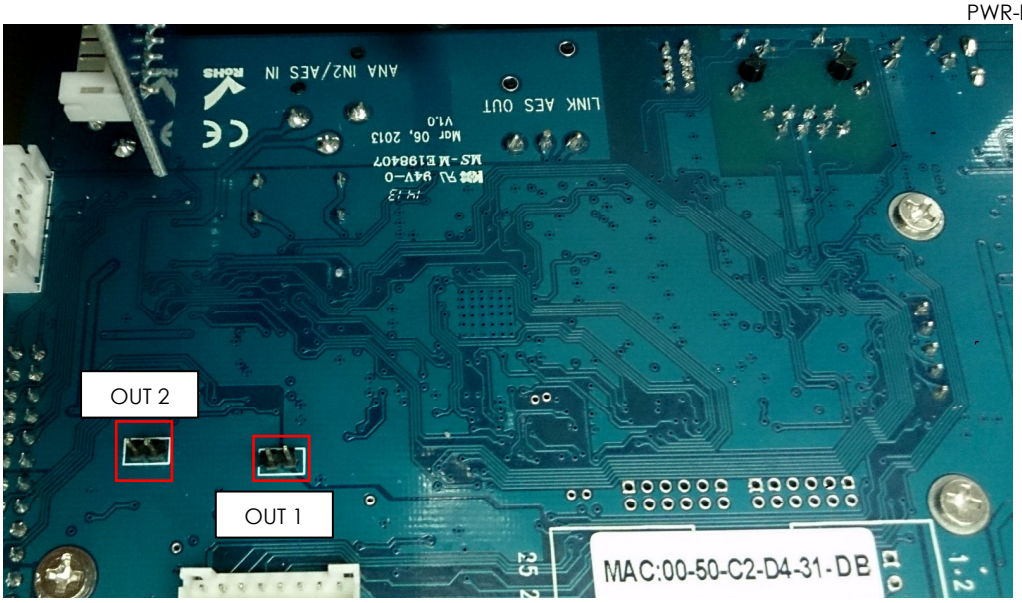


Jumper	Unbalanced	Balanced
Open Closed	2Vrms Max 1Vrms Max	8Vrms Max 2Vrms Max

2.3.6 Amplifier jumper pads

The PWR-ICE250 features an amplifier module with "symmetric" output level. In most 2 way situations (e.g. 2way box with sensitive HF frequency), the high frequency would typically only require a fraction of the power of the low frequency driver. While the level could be adjusted inside the DSP, we added an analog pad on the board to "pad" the analog signal instead. See below jumper and state for more information. By default, all jumpers will be closed (0dB and no attenuation)

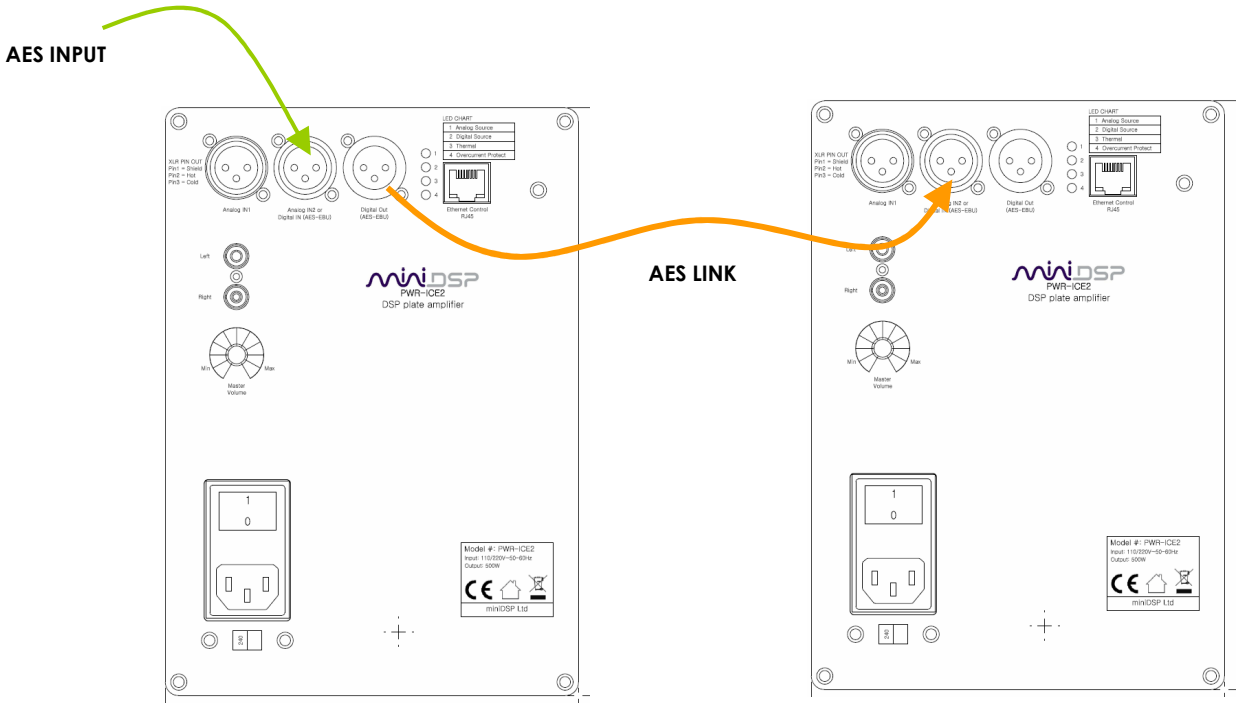
Jumper	Output level
Open Closed	-16dB 0dB / No attenuation.



2.3.7 Digital Link OUT

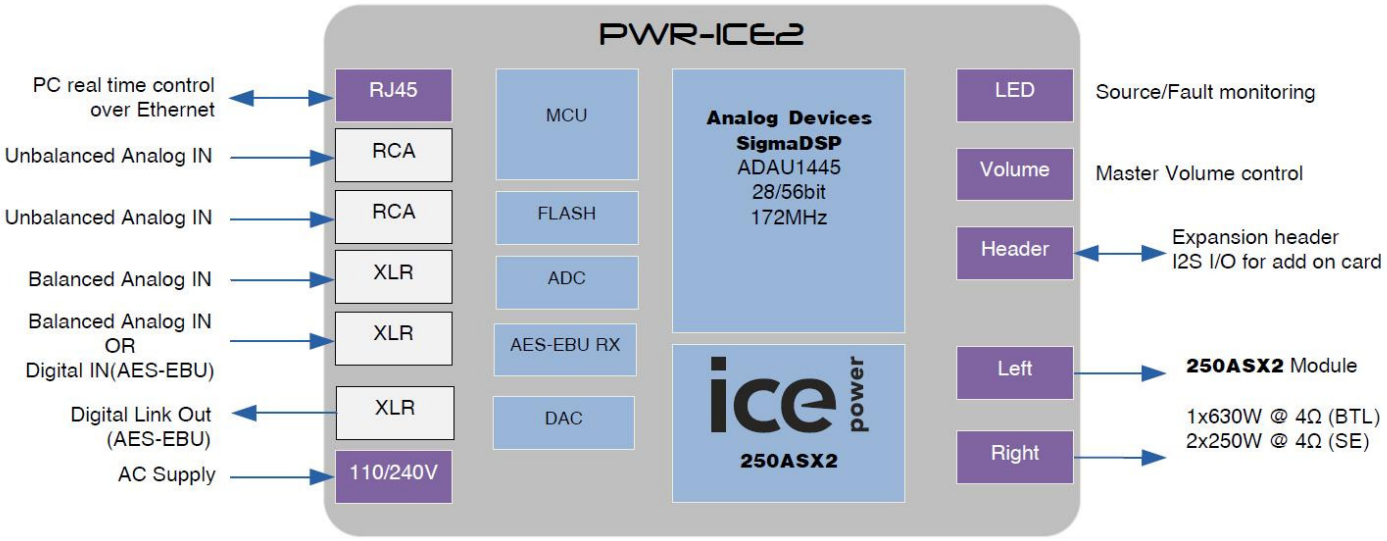
The digital Link OUT of the PWR-ICE is a "buffered" AES output of the Digital IN. It's an AES-Output allowing 2 x plate amplifiers to share Audio. It could be used for a stereo configuration or dual Subwoofer. To use the Digital link between 2 plates, use an XLR male to XLR female cable between the Digital OUT of the source plate amp (i.e. first one in the chain) to the Digital IN of the second plate.

NOTE: The Digital Link OUT is only a buffered output of the digital Input. Unless you have a digital input (AES/SPDIF) on XLR#2, this output will not be enabled.



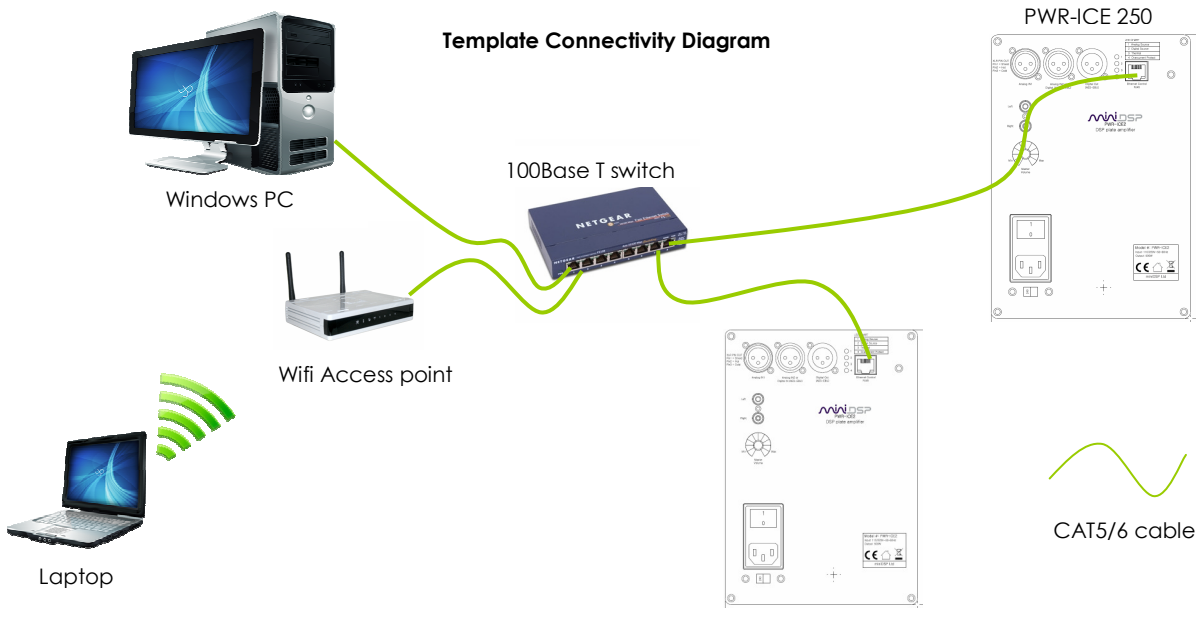
Features

2.4 System diagram



2.5 Typical setup

The following diagram is a typical system & connectivity diagram in a stereo 2way Active setup. To prevent any damage, make sure the board is turned OFF before doing any connection modifications.



2.6 Network configuration

The PWR-ICE requires a network connection for initial configuration via the plug-in software. The module is using "ZeroCONF" technology and doesn't require any IP/Router configuration. There are 2 possible use:
- DHCP networks: In networks where a DHCP server is present (e.g. router), an IP address will automatically get assigned to the module. No configuration is required.
- AutoIP (Link Local address): If you do not have a network with a DHCP server, you can still connect your PC directly (or through a network switch) to the module. It will automatically get assigned an AutoIP (Link Local address).

Note: If your PC is setup with a static IP, you may not be able to access the module without a DHCP server. Make sure to set your IP to "Automatic" to be able to automatically revert to Link Local

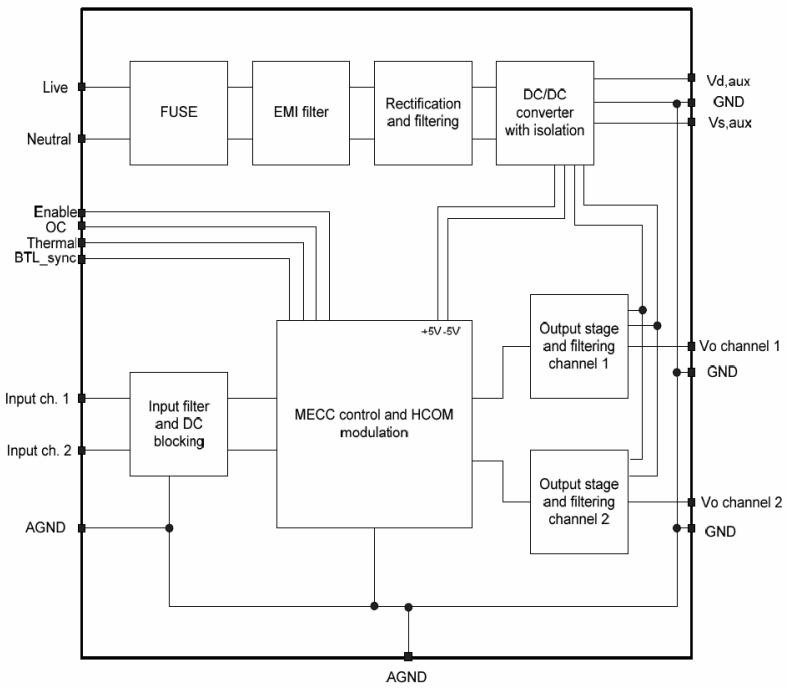
WARNING: On some PC, firewalls can block the communication packets used for controlling the PWR-ICE250. Make sure to allow the PWR-ICE plug-in to send packets over UDP and TCP.

2.7 Amplifier key specifications

The PWR-ICE250 is fitted with an ICE power 250ASX2 module. A renowned OEM amplifier module used in a lot of Hifi configuration.
Key specifications:

- 630W @ 1% T+N, 20Hz – 20kHz, 4Ω, BTL
- 2 x 230W @ 1% T+N, 20Hz – 20kHz, 4Ω, SE (both channels driven)
- 121dBA dynamic range (BTL-mode)
- 112dBA dynamic range (SE-mode)
- T+N = 0.002% @ 1W (8Ω,1kHz, SE-mode)
- T+N = 0.002% @ 1W (8Ω,1kHz, BTL-mode)
- 86,4 % total efficiency @ 250W, 8Ω
- CCIF Intermodulation distortion = 0.0009%, 10W, 4Ω, 18.5kHz/1kHz
- ±25V unregulated auxiliary power supply
- Selectable Mains 85-132VAC & 170-264VAC

System diagram of 250ASX2 module.



2.8 Amplifier absolute maximum ratings

Mains Input Section
115V mains setting

Symbol	Parameter	Value	Units
AC_{max}	Maximum off-line voltage	132	V_{AC}
AC_{min}	Minimum off-line voltage	85[1)]	V_{AC}
F	Mains frequency range $85V_{AC}$ - $132V_{AC}$	45 – 65	Hz

230V mains setting

Symbol	Parameter	Value	Units
AC_{max}	Maximum off-line voltage	264	V_{AC}
AC_{min}	Minimum off-line voltage	170[1)]	V_{AC}
F	Mains frequency range $170V_{AC}$ - $264V_{AC}$	45 – 65	Hz

2.9 *Amplifier output power specifications*

Power Specifications

Unless otherwise specified. T_a=25 ^{0}C, f=1kHz, R_L=8Ω, 230V mains

Symbol	Parameter	Conditions	Min	Typ	Max	Units
t_{Pmax}	Time of maximum rated output power[4)]	500W out. No preheating.	-	50	-	s
P_T	Continuous output power[4)] without thermal shutdown. (SE, 4Ω)	Thermal stab. @ T_a = 25 ^{0}C. Both channels driven	-	60	-	W
P_T	Continuous output power[4)] without thermal shutdown. (SE, 8Ω)	Thermal stab. @ T_a = 25 ^{0}C. Both channels driven	-	95	-	W
P_T	Continuous output power[4)] without thermal shutdown. (BTL, 8Ω)	Thermal stab. @ T_a = 25 ^{0}C.	-	180	-	W
P_{SMPS}	Quiescent power consumption (amplifier disabled)	Enable pin low	-	7	-	W
P_q	Quiescent power consumption (amplifier enabled)	Po = 0W	-	14	-	W
η	Total power efficiency	Po = 2 x 250W 4 ohm SE Po = 2 x 100W 4 ohm SE Po = 1 x 100W 8 ohm BTL Po = 1 x 500W 8ohm BTL	- - - -	76,3 76 77,2 84,4	- - - -	%
Vd_{aux}, Vs_{aux}	Nominal DC voltage	Mains voltage and output power within specified ranges	±17,7	±24,2	±28	V

Software setup

A Windows PC environment is required for the initial configuration of the product. Here are the minimum requirements.

Software

- Microsoft• ® Windows® Vista® SP1/ XP pro SP2 / Windows 7
- Microsoft• ® .NET framework v3.5
- Latest version of Adobe Flash web plug-in from Adobe.com website : http://get.adobe.com/flashplayer/
- Latest version of the Adobe Air environment from Adobe Website: http://get.adobe.com/air/

Hardware

- PC with 1GHz or higher processor clock speed recommended / Intel® Pentium®/Celeron® family, or AMD K6®/AMD Athlon®/AMD Duron® family, or compatible processor recommended.
- 256 megabytes (MB) of RAM or higher recommended
- Ethernet card (100/1000Mbps)
- Keyboard and mouse or compatible pointing device

Step1: Pre-installation steps

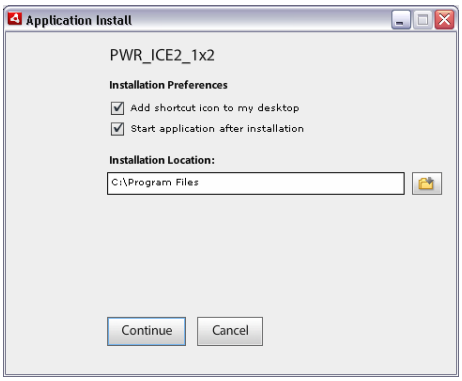
- Install .net framework and .Air environment on your PC.

Step2: Download the PWR-ICE 1x2 package

- Login with your user account on miniDSP website to gain access to the secure section
- The latest version of the PWR-ICE 1x2 will be available from the User Downloads section. (http://minidsp.com/userdownloads)

Step3: Installation

- Launch the PWR-ICE plug-in



Following a successful installation, PWR-ICE plug-in will automatically start and discover modules on the network if already connected. Note that if you were not connected to internet at the time of software installation and didn't update you Flash/Flex installation, the software will not boot up. Make sure to connect to Internet to get the latest release of Adobe environment.

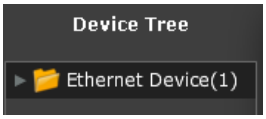
Step4: Because the AVBStreamer requires Ethernet to communicate to the units, Windows OS may warn to "Unblock" the software with the message below. Make sure to click on "Unblock" or you will not be able to access units.

Windows Security Alert
To help protect your computer, Windows Firewall has blocked some features of this program.
Do you want to keep blocking this program?
Name: AVB_bridge
Publisher: Unknown
Keep Blocking
Unblock
Ask Me Later
Windows Firewall has blocked this program from accepting connections from the Internet or a network. If you recognize the program or trust the publisher, you can unblock it. When should I unblock a program?

Step5: With the software up and running, you're now ready to connect and configure your module. There are 2 now possible path:

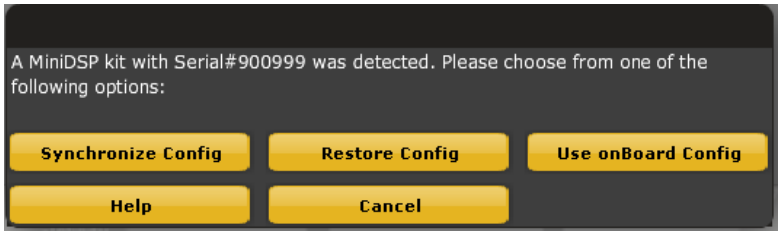
- OPTION A: Configure the module while online, making changes as required. Make sure to set the volume control to Min (equivalent to muted) at back of the plate amplifier.
- OPTION B: Configure the module while offline, building a test configuration and loading to the module afterward.

a) Connect to the module
Looking at the "Device Tree" tab on the left, you should see one or more devices discovered. The numbers between bracket indicates the number of modules discovered.



Click on the folder icon "Ethernet Devices" to "list" the device.

Step6: To connect and configure the module, simply click on the module in the list to configure the module as required.
- If using online configuration, just connect and configure your module online
- If using offline configuration, you can configure the software first and then connect to the unit. The following dialog box will appear:


A MiniDSP kit with Serial#900999 was detected. Please choose from one of the following options:
Synchronize Config
Restore Config
Use onBoard Config
Help
Cancel

Here is a summary of options:

1. Synchronize config: Click on this button to "push" the current configuration on your plug-in to the PWR-ICE.

PC configuration ⇨ PWR-ICE

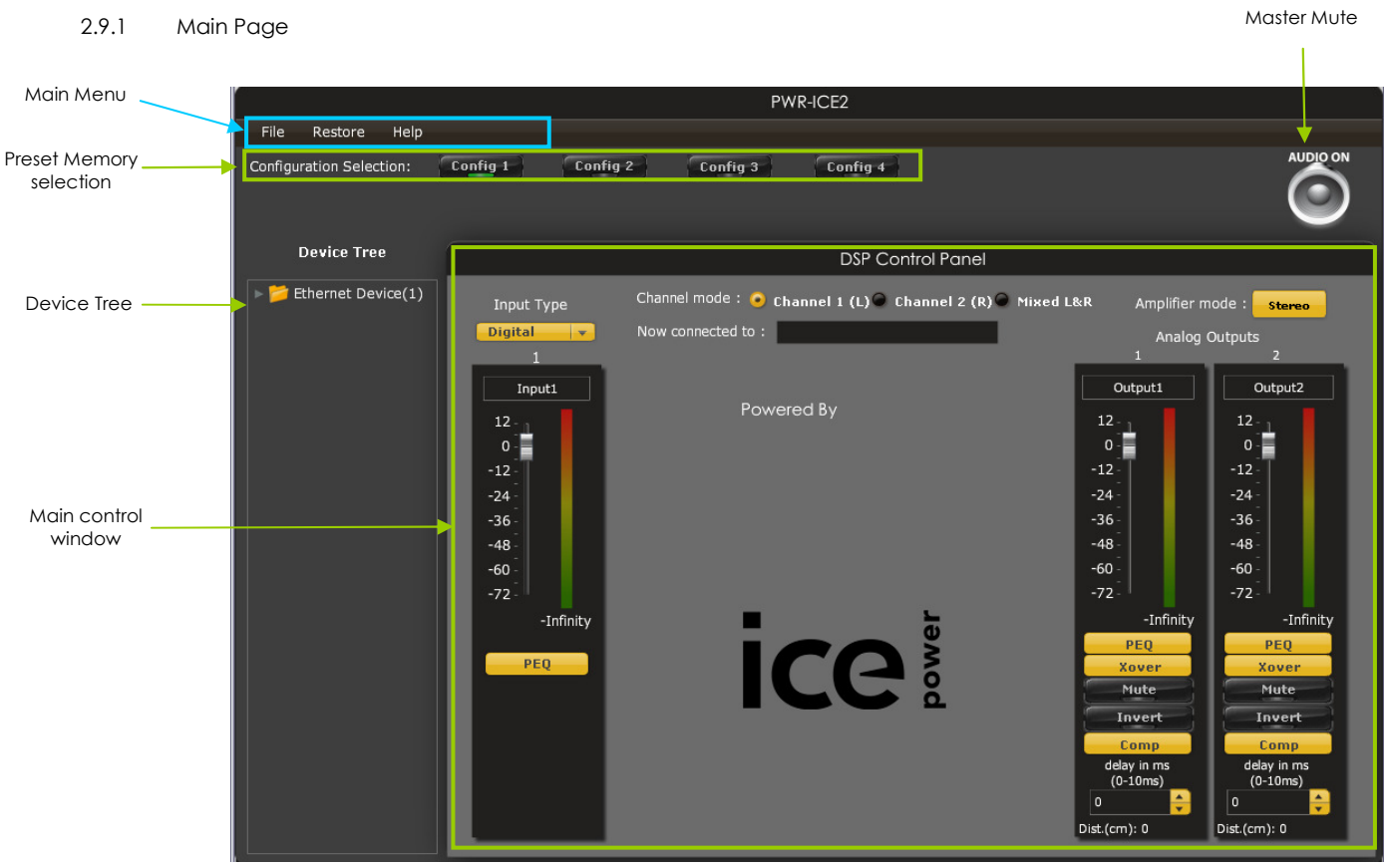
2. Restore config: Click on this button to restore the whole DSP configuration to default. Warning that you will loose all settings and un-configured filters could damage your speaker. We don't recommend clicking on this button unless your speakers are not connected.

3. Use onboard config: Click on this button to "recover" the configuration that is currently loaded on the PWR-ICE. Unlike other USB miniDSP platforms, the PWR-ICE is able to restore a configuration that was stored on a unit.

PC configuration ⇦ PWR-ICE

4. Cancel: Click on this button to cancel the connection and return to the plug-in. Your connection will be offline.

2.9.1 Main Page



Main input page for the PWR-ICE 250 plug-in

The main control page can be summarized in few core sections.

- File Access to Load/Save configuration
- Restore: Access to restore the whole system or only the current selected configuration (preset)
- Help: Link to the help file
- Main control tab: Allows control of all main DSP control settings (e.g. Filters, Gain, metering..)
- Device Tree section: List all device discovered on the network
- Master Mute: Mute all inputs & outputs signal

2.9.2 Preset Memory selection

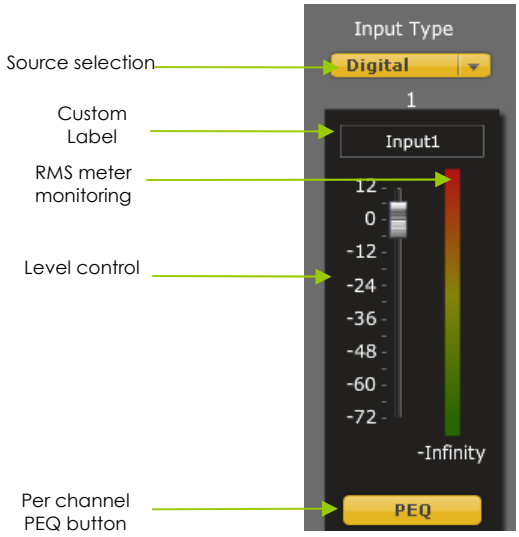
The PWR-ICE 250 allows the user to create up to 4 preset memories for a quick reconfiguration of the processor. Under each configuration, all settings of the platform are saved.
Placed at the top of the user interface, the use of configurations couldn't be easier. Simply toggle between configurations by clicking on the config button. The currently selected configuration

WARNING: By toggling configurations, you may go from a working configuration (i.e. correct volume/setup/Eq) to an unknown (or improperly configured) configuration. We therefore recommend that you perform a quick configuration offline (without being connected/synchronized to the processor) to prevent any damage to your equipment.

2.9.3 Input source selection

The first step in configuring your MiniDSP consists in making sure audio is being fed to the input correctly. Two types of inputs can be selected on a PWR-ICE250:
- Analog input: XLR analog input OR RCA unbalanced input
- Digital input: AES input or SPDIF input (Unbalanced into XLR). When toggling this ON, the XLR#2 will become a Digital input, routing the audio to the AES receiver.

The RMS meter will quickly indicate the average value of the input signal in dBFS (i.e. relative to the full scale of the ADC or 24bit I2S signal). This meter displays dB full scale (dBFS) values and will saturate at 0dBFS (full scale of the ADC). Do make sure to keep the signal below 0dBFS (red color) and with enough headroom (say 10dB) to prevent saturation during the typical audio peaks of a music source.

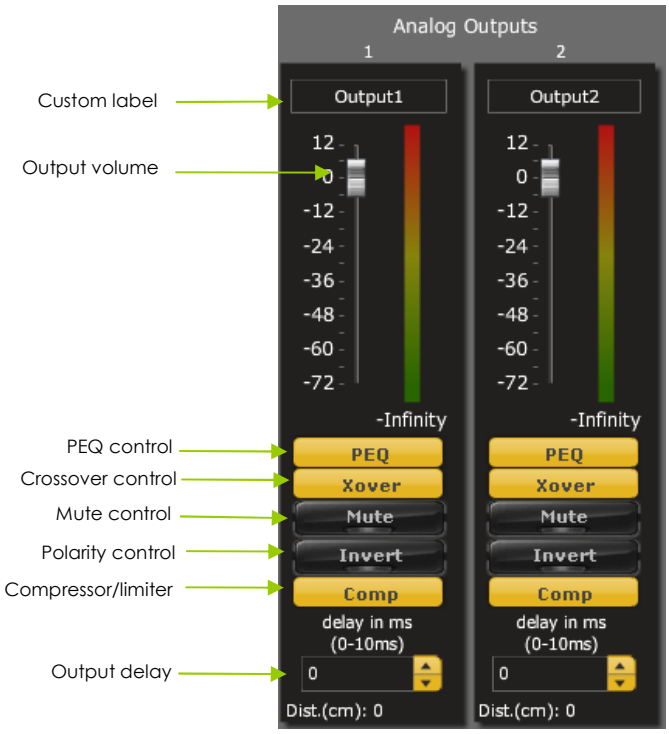


2.9.4 Channel Mode

The PWR-ICE 250 runs a 1 x IN, 2 x OUT DSP configuration and will operate under 3 modes selectable from the GUI of the plug-in.

Channel 1 (L): Mono input from RCA unbalanced Left, analog XLR input 1 or Digital AES input Left
Channel 2 (R): Mono input from RCA unbalanced Right, analog XLR input 2 or Digital AES input Right
Mixed L&R (Mixed): Mixed input of RCA unbalanced Left & Right, analog XLR input 1& 2 or Digital AES input left&right.

2.9.5 Analog Outputs



2.9.6 Custom Label

The custom label feature allows you to input a user defined label for each output channels: A handy feature to remember the output configuration of your system.

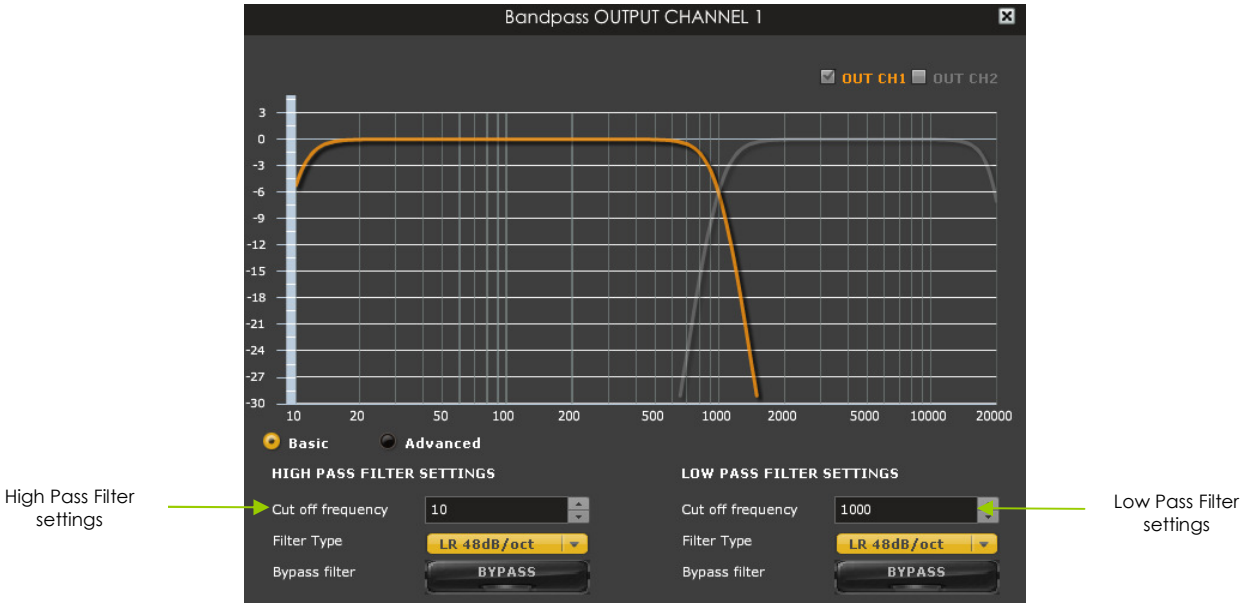
2.9.7 Output volume

A fader control from +12 to -70dB digital gain control.

2.9.8 Crossover

Controls for the Low& High pass filters are available when clicking on the Xover (crossover) button:

The log scale graph gives you the equivalent response of the applied filter. By pointing the mouse anywhere on the plotted curve, the dB attenuation and respective frequency are displayed.

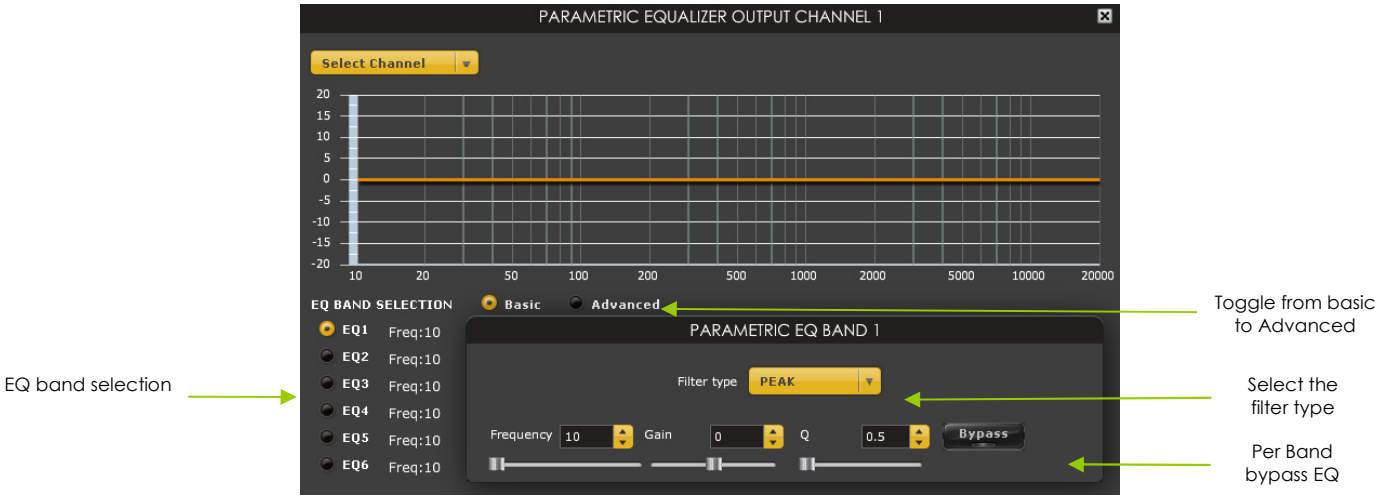


- Cut off frequency: Select the -3dB frequency by either entering the value or using the up & down arrows of the numeric box.
- Filter types:
  - Linkwitz Riley (LR): Available in 12, 24, 48dB/oct
  - Butterworth (BW): Available in 6, 12, 18, 24, 30, 36, 42, 48dB/oct
  - Bessel: Available in 12dB/oct

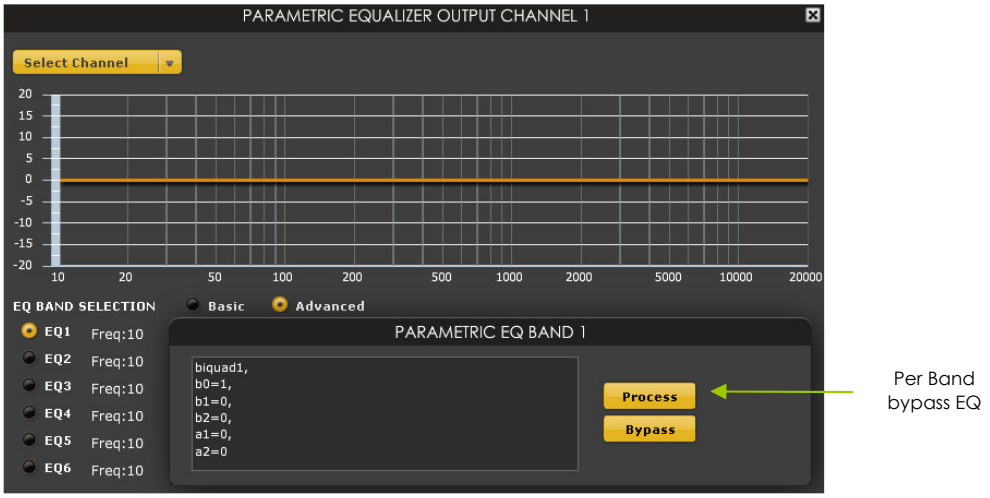
  Each filter has different phase and amplitude characteristics. We recommend you to look online for more information about the specifics of each filter.
- Bypass button allows you to Enable/Disable the filter. Make sure to bypass the filter if you do not need the filter enabled.

2.9.9 Parametric Equalizer

- EQ band selection: Select one of the 6 x Parametric Equalizers
- Filter type: Select between Peak, Low Shelf, High Shelf
- Bypass: Disables the equalization but doesn't reset the settings. A handy tool to check the influence of equalization on your system without resetting to zero. Note that the bypass button is per-band Bypass (not overall).
- Linking feature: Similar to the crossover dialog box, you can link up two EQ settings together.
- Basic/Advanced radio button: Toggles from basic mode (i.e. input frequency) to advanced custom biquad input.



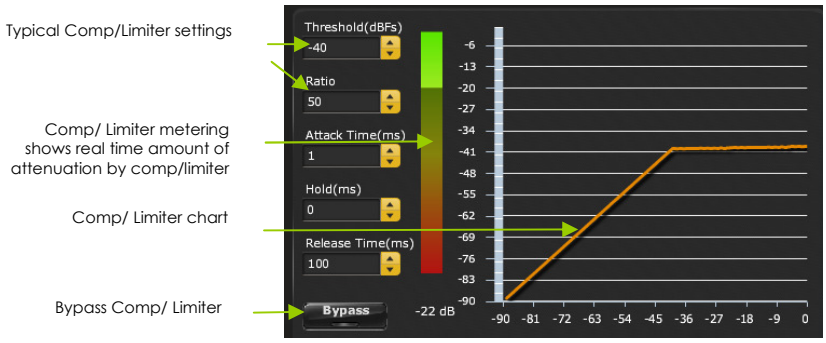
Basic mode



Advanced mode for custom biquad programming

The Advanced mode can be used for your custom filters of external software such as Room EQ Wizard (REW). For more information about the auto-tuning feature of the miniDSP, please check miniDSP's website for the following application note.

2.9.10 Compressor /Limiter



A compressor/Limiter allows dynamic range compression of the signal to prevent damage of your speakers. Extensive information is available online on the use of compressor/limiter. Please take the time to familiarize yourself with such processing block before using it.

2.10 Load/Save/Restore a configuration

2.10.1 Load configuration:

Use this feature to load a previously saved configuration. The file must be as .xml format and previously saved from this plug-in. For complexity reasons, inter-plug-in compatibility is not available.

2.10.2 Save configuration

Use this feature to save your audio settings configuration. The following dialog box allows you to save the file anywhere on your PC as a .xml format. All 4 memory preset configurations will be saved.

2.10.3 Restore Factory default

Use this feature to restore the board back to factory default. Warning that all configurations will be restored back to default from this action.

2.10.4 Upgrade firmware

In order to enable some new features, the PWR-ICE may require to be flashed with a new firmware. All the required tools and firmware files are already included in the in the installation folder of the plug-in. So the first step to make sure you have everything you need is to install the new plug-in by logging to the UserDownload section. Note that firmware upgrade tools is Windows only at this point of time.

A tftp client is required in the PC to download the firmware. Most operating systems come with a TFTP client built in.
In Microsoft Windows, this utility is named tftp.exe. This utility is a very simple console application which can be used to download .hex file over the network to the device.
WinXP/WinVista

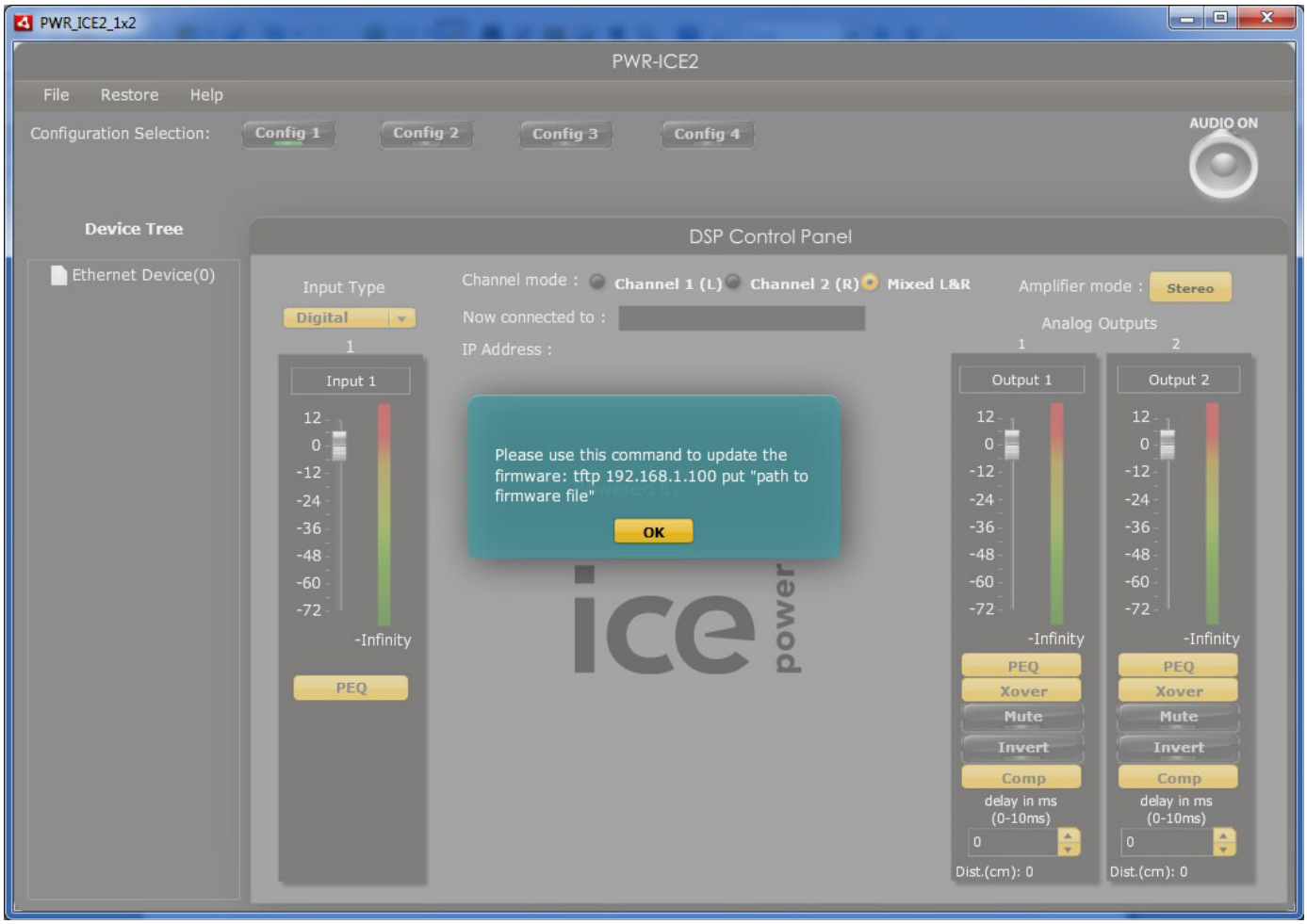
Win7
Tftp utility is disabled in Windows 7 by default, to turn it on, select:
Control Panel -> Programs and Features -> Turn Windows features on or off -> TFTP Client (Note: check the checkbox to enable TFTP Client utility). Then, click the OK button.

STEP by STEP to update

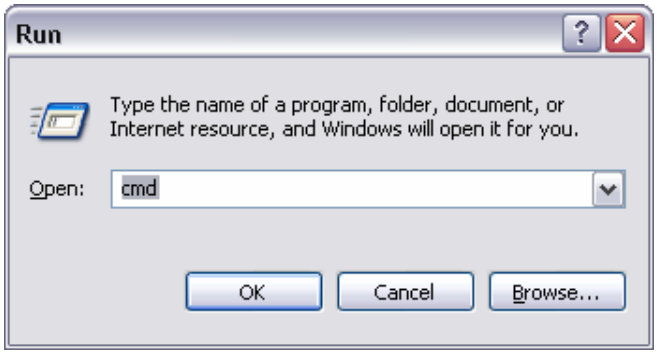
1. Connect the PWR-ICE device to the network through Ethernet cable.
2. Power on the PWR-ICE device.
3. Open the PWR_ICE2_1x2 plugin installed on the PC. The PC should also be connected to the same network domain and DCHP should be used to assign ip address to PC and PWR-ICE2 device.
4. The NetBIOS name of the PWR-ICE2 will appear as an Ethernet Device under the Device Tree in the plugin. (If the name doesn't appear, click the Ethernet Device folder to expand it. The name will appear under the Ethernet device folder)
5. Click the NetBIOS name listed under the Ethernet device folder to connect to the device. (e.g. Click the name: PWR-ICE2 as shown in the below example)

6. On the menu bar, select Restore -> Upgrade Firmware, the device will go into bootloader mode with green led on the LAN port flashing.

7. The device will be disconnected and a pop-up showing: Please use this command to update the firmware: tftp .....



8. Open the command prompt from Windows. You can do so with RUN - > CMD

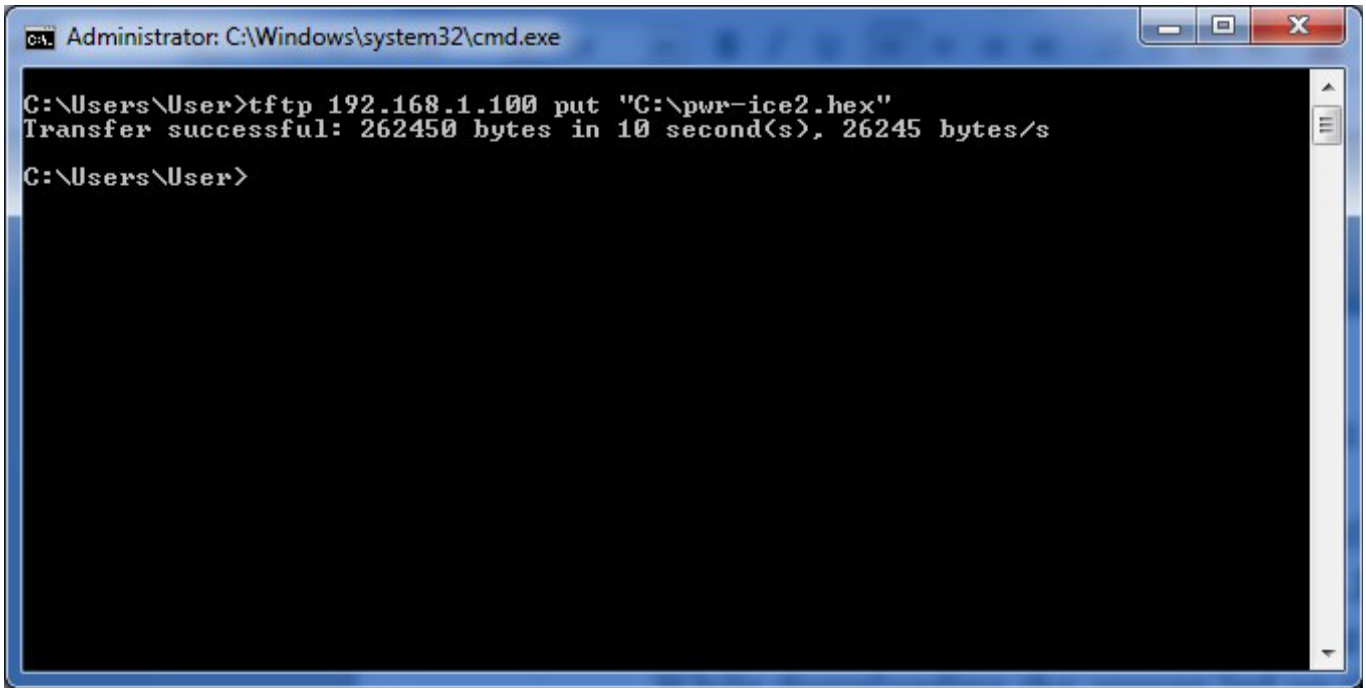


9. Type in the command word as displayed in the pop-up in previous step.
"**path to firmware file**" is the absolute path to the firmware file that you downloaded on your PC from the "UserDownloads" section.

For this example, type: tftp 192.168.1.100 put "C:\pwr-ice2.hex"

10. Hit Enter key to download the firmware to PWR-ICE2 device.

11. While downloading, both green and orange led on the LAN port should light up.
12. The command prompt will output Transfer successful after 9~10 seconds, indicating the firmware was downloaded successfully.


Administrator: C:\Windows\system32\cmd.exe
C:\Users\User>tftp 192.168.1.100 put "C:\pwr-ice2.hex"
Transfer successful: 262450 bytes in 10 second(s), 26245 bytes/s
C:\Users\User>

13. Power off the PWR-ICE2 device. Wait for a second until all leds go off. Then, power on the device again.
14. The NetBIOS name of the PWR-ICE2 should re-appear as an Ethernet Device under the Device Tree in the PWR-ICE2_1x2 plugin.

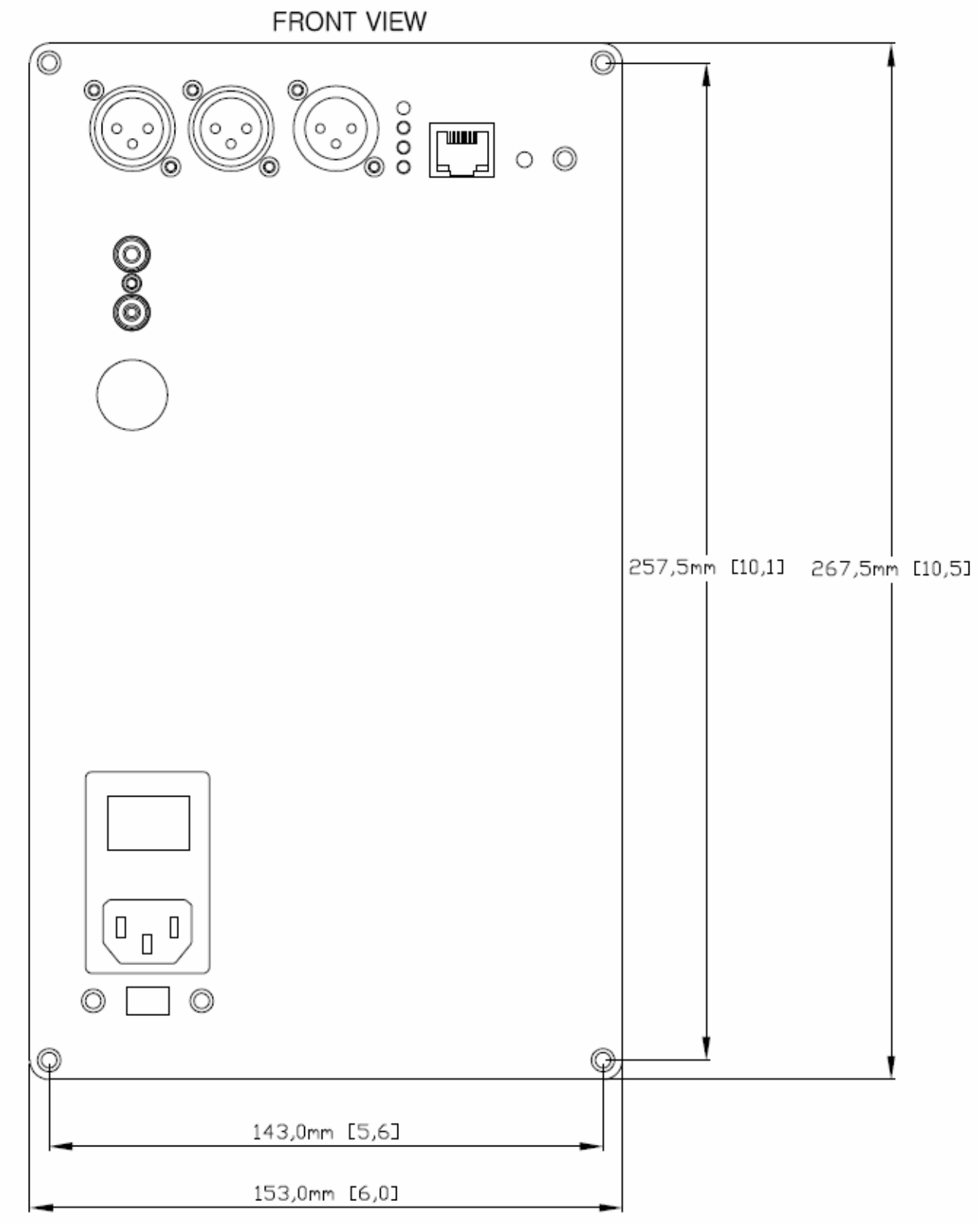
The firmware upgrade is finalized.

3 Troubleshooting

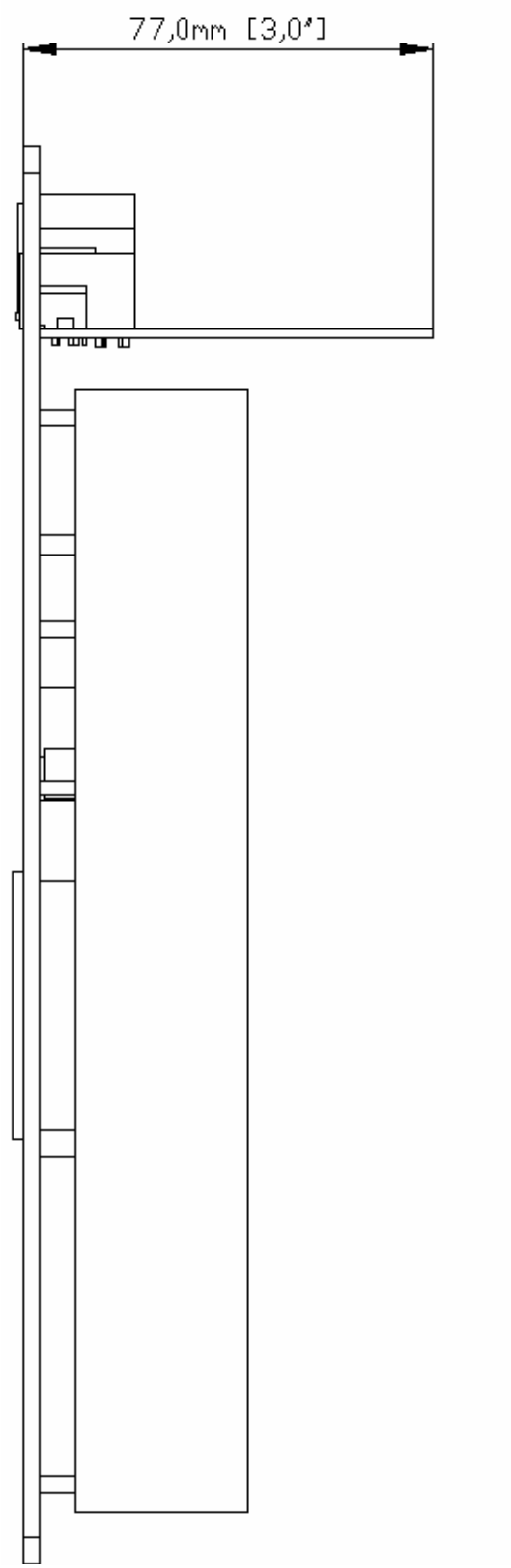
The following symptoms were found to be the most likely cause of issues.

Item#	Symptoms	Troubleshooting recommendation	If not solved go to item
1	No audio on outputs	- Make sure that audio signal is shown on the RMS input meters. - Confirm the source selection is correct (Analog/Digital) - Double check that output mute buttons are not enabled - Confirm that master mute is not enabled - Confirm that you are synchronized and live	
2	No audio on RMS input meters	- Check your connectivity - Double check the strength of your input signal. - Confirm that master mute is disabled	10
3	Audio on input RMS meters but no audio on outputs	- Make sure the matrix mixer is set to send audio to the output channels in a mixer plug-in - Check the output mute status for each channel	10
4	Cannot reload configuration	- Confirm the file format of your file (.xml) - Confirm the version of the file	10
5	Cannot connect to the board	- Check your IP settings, if no DHCP server is present, make sure your computer is not set static address. - On WinXP, confirm that you have installed .net environment. - Confirm that you do not have a firewall blocking the communication.	10
6	Cannot install software	- Confirm that you installed the required frameworks (Adobe Air/ Microsoft .net / SP2 XP)	10
7	Software running in background but not showing	- Adobe Air environment most likely requiring a version update. Connect your PC to the Internet to automatically get an update.	10
10	Problem unsolved by above suggestions	- Have a look at our forums to see if someone else already had this issue. - Send us an email (info@minidsp.com) with a clear explanation of the symptoms and descriptions of the troubleshooting steps you already performed	n/a

4 Mechanical drawings



SIDE VIEW



REAR VIEW + RECOMMENDED OPENING (RED)